Case Report

Fibro-osseous pseudotumor of the digit

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Abstract

Fibro-osseous pseudotumor of the digit is an unusual ossifying soft tissue lesion, which is usually an ill-defined soft tissue mass in radiography, with focal calcification, especially in the proximal phalanx. It predominantly affects young adults and, unlike myositis ossificans, is more common in women. The current case is a 30-year-old man who presented with pain and swelling on the dorsum of middle phalanx of the left index finger without history of trauma. Diagnosis of this lesion requires a high index of suspicion and should be differentiated from myositis ossificans, turret exostosis, and extra-skeletal osteosarcoma, which are discussed. This lesion is considered benign and has an excellent prognosis following complete removal and local recurrence is unusual. No cases of malignant change are on record.

Key Words: Digit, fibro-osseous pseudotumor, heterotopic ossification, soft tissue lesion

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INTRODUCTION

Fibro-osseous pseudotumor of the digit is an uncommon subcutaneous mass that usually occurs in young women, and it appears with pain and swelling of a finger. This mass should be differentiated from myositis ossificans, Turret exostosis, and extraskeletal osteosarcoma.

CASE REPORT

A 30-year-old male patient presented to our clinic with a history of tender swelling on the dorsum of middle phalanx of left index finger. The patient noted the mass since 12 months, which gradually became larger.

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The mass was 13 mm in diameter [Figure 1], with mild tenderness and firm in palpation, slightly mobile and, without marked movement on interphalyngeal motion, and no obvious adhesion to adjacent skin. The sensation of the finger was normal. Flexor and extensor tendons were intact; however, finger motion was slightly limited.

There was no history of major trauma, sharp injury, infection, or constitutional symptoms such as malaise, fever, or weight loss. Laboratory tests (CBC diff, ESR, CRP, Ca, P, Alk-P) were within normal limit. Tests for tuberculosis, brucella and syphilis were negative. Chest roentgenogram was normal.

Other imaging investigations included simple x-ray and CT-scan of the index finger. Conventional posteroanterior and lateral radiography revealed a paraosteal sclerotic lesion just abutting middle phalanx with bone density similar to adjacent bone and slight periosteal reaction [Figure 2], and further evaluation with CT-scan noted that the lesion has a patchy irregular border without cortical destruction or sauccerization and there is no typical zonal pattern in the lesion [Figure 3].

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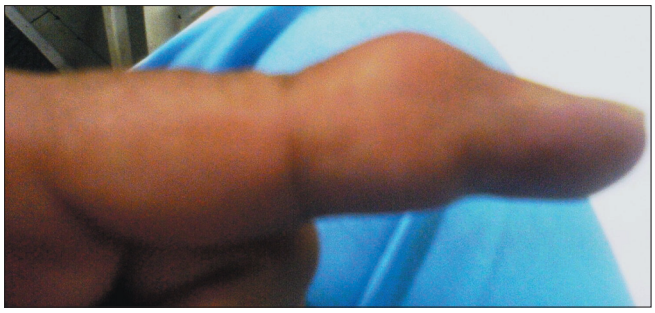

Figure 1: Fusiform mass in dorsal aspect of the index finger

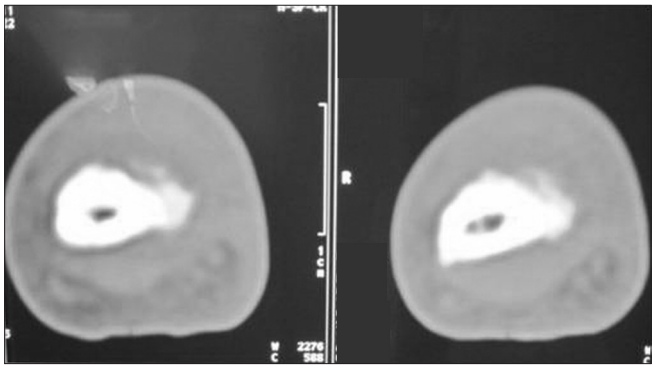

Figure 3: Soft tissue osseous lesion without of the middle phalanx cortical destruction

An excisional biopsy with dorsolateral incision was performed. The lesion was 1 × 1 × 1.5 cm in size, white-grayish in color, with hard consistency, and no adhesion to adjacent tendons or soft tissues. Histopathologic examination revealed proliferation of fibroblasts that are loosely arranged, a prominent myxoid matrix, and deposits of osteoid rimmed by uniform osteoblasts. Multinucleated giant cells were also existed [Figure 4].

DISCUSSION

Fibro-osseous pseudo-tumor of the digit (FPOD), a heterotopic ossification that is closely related to myositis ossificans, occurs in the subcutaneous tissue of digit. It is an unusual case that has been described under various names, including pseudo-malignant osseous tumor of the soft tissues,[1] florid reactive periostitis of the tubular bones of hands and feet,[2] and parosteal fasciitis.[3]

Clinically, this lesion affects young adults, mainly women, and presents as a painful, localized, fusiform, and often erythematous swelling in the soft tissues of the fingers, especially the region of the proximal phalange, and less commonly, the toes.[4-6] Although history of trauma is not necessary, in the series by Dupree and Enzinger,[4] a history of trauma was provided only nine of their 21 patients. Similarly,

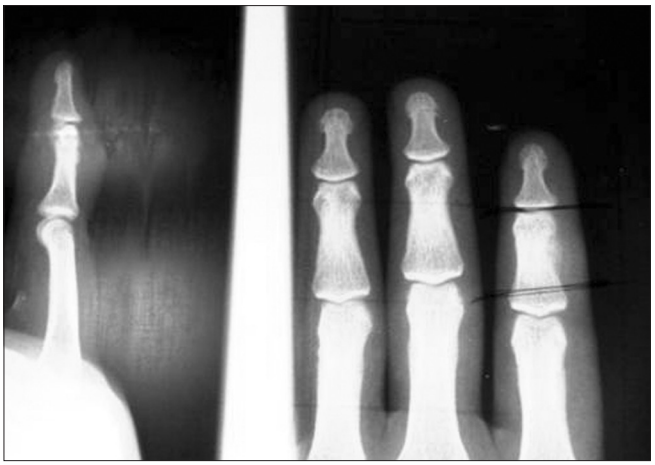

Figure 2: Paraosteal sclerotic lesion

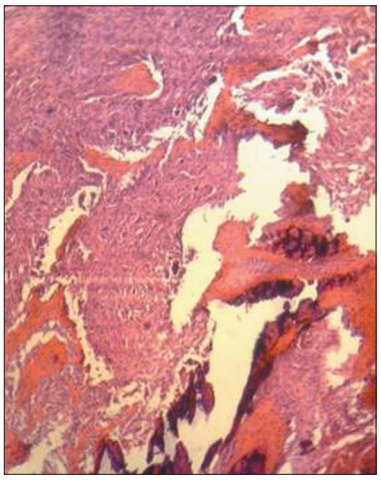

Figure 4: Histopathologic examination revealed proliferation of fibroblasts, dposit of osteoid, osteoblasts, and giant cells

Spjut and Dorfman,[2] reported a history of trauma for five of 12 patients.

Roentgenographic examinations reveal relatively considerable soft tissue swelling along with focal calcification that lacks the typical zoning pattern of myositis ossificans.[4,7,8] There may be thickening of adjacent periosteum, and rare cases erode adjacent bone.[4,9]

In earlier reports in 1976 Edward *et al.*[3] recommended wide block excision or ray amputation for such lesions, but according to recent reports after complete excision of the lesion, prognosis is excellent and there is no tendency toward local recurrence. Moreover, there is no evidence of malignant transformation.[1,4,5,6]

The major differential diagnoses are myositis ossificans, Turret exostosis, and extraskeletal osteosarcoma.

FPOD has histologic and clinical features in common with myositis ossificans. This has led many to consider the two to be synonymous. Myositis ossificans most frequently occurs in young male athletes, although a specific history of trauma is absent in up to 40% of cases.[10] An elevated ESR and Alk-P can be an accompanying finding, but neither are specific for this entity.[10,11] Myositis ossificans can sometimes resemble juxtacortical or surface osteosarcomas, particularly if a radiolucent cleft is not clearly present between the lesion and the adjacent cortex.[12]

In confusing cases, CT nicely delineates the zonal pattern that is classically seen in myositis ossificans. Clinically, and often on MR imaging, osteosarcoma cannot be excluded. The presence of peripheral density at radiography or CT, the presence of an enhancing rim on contrast-enhanced MR imaging, and the demonstration of a radiolucent cleft between the lesion and the neighboring bone are helpful features in differentiating myositis ossificans from osteosarcoma.

Although presentation of extraskeletal osteosarcoma is usually that of enlarging soft tissue mass, it typically occurs in older patients, is slightly more common in male than in female patients and rarely involves the digits, and is characterized by more pleomorphic hypochromatic cells, varying amounts of neoplastic osteoid and bone and atypical mitotic figures.[4]

Turret exostosis presents as a well-delineated mass attached to the bone surface and histologically there is central located new bone surrounded by a peripheral cap of cartilage.

Therefore, diagnosis of the lesion requires a high index of suspicion and correlation of physical examination and radiographic findings with histologic findings usually is necessary for definite diagnosis.

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